

Curiously, in the original description of *C. plattense*, Rydberg cited his July 24, 1891 collection from Scotts Bluff, Nebraska. Petrak in his study of *Cirsium* in North America placed *Carduus nebraskensis* Britton in synonymy under *C. canescens*, but then misapplied this name to what is at present known as *C. flodmanii*.—UNIVERSITY OF MINNESOTA, MINNEAPOLIS.

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## SOME NEW ENTITIES IN THE FLORA OF THE BROOKS RANGE REGION, ALASKA

CONTRIBUTIONS TO THE FLORA OF ALASKA, No. 2

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IN the course of two seasons' botanical explorations in the Brooks Range region of Alaska a number of plants were discovered which could not be fitted into any known systematic categories and which after careful review of literature and collections must be regarded as being new to science.<sup>2</sup>

In the report on the Brooks Range investigations which I prepared as a dissertation to the Graduate School of the University of Michigan under the title (1951) "A Floristic and Phytogeographic Survey of the Southern Slopes of the Brooks Range, Alaska" these new entities are described and discussed at some length. But because of inevitable delays associated with the publication of such a lengthy account it seems expedient to publish here briefly the formal diagnoses of these new entities.

Altogether five undescribed species were found in the flora of the Brooks Range region. Two of these are members of the genus *Oxytropis* which have been recently proposed as new by Mr. A. E. Porsild in *Can. Field Nat.* 64 (2). A third species is a *Poa* related to *Poa abbreviata* R. Br. This taxon, as yet undescribed, is in the hands of Mr. J. R. Swallen of the Smithsonian Institution.

The remaining species and forms are described and briefly discussed as follows:

<sup>1</sup> We regret to report that Louis H. Jordal was killed in an airplane crash in December, 1951. Eds.

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**Festuca altaica** Trin., f. **pallida** f. nov. Paniculae angustiores quam in forma speciei typica; spiculae pallide flavescenti-virides; lemmata dorsaliter paene glabra. Specimen typicum in Herbario, Univ. Michiganensis conservatum, *Jordal 1862* prope "Wiseman" in montibus "Brooks Range," Alaskanis, denominatis.

No. *1862* has conspicuously pale yellowish-green spikelets with nearly glabrous lemmas. These plants are shorter (up to 45 cm. tall) than the typical form of the species and the inflorescences are less ample. This conspicuous form appears not to have been recognized before.

**Festuca altaica** Trin., f. **vivipara** f. nov. Plantae robustae; floribus viviparis. Specimen typicum in Herbario, Univ. Michiganensis conservatum, *Jordal 2471* ad locum "Wild Lake" in montibus "Brooks Range," Alaskanis, denominatis.

This collection is comprised of a tall (90 cm.) viviparous form of very robust appearance with broader leaves and coarser stems etc., than the typical form of the species. Although it appears to be only of sporadic occurrence it deserves a name.

**Braya Bartlettiana** sp. nov. Perennis, gracilis, 3-10 cm. alta; caudice plus minusve elongato plerumque multicipiti sed interdum simplici; ramis caudicis folia dense aggregata et scapum singulum ferentibus; folia 5-20, basalia, lineari-lanceolata, 5-25 mm. longa, minus quam 2 mm. lata, apice acuta vel obtuscula, ad basim versus late et pellucide marginata usque ad insertionem semi-amplexicaulem latam, marginibus subintegris vel denticulis duobus (raro 4) praeditis, sparse ciliatis, pilis vel denticuliformibus vel bifurcatis, ad basem marginibus hyalinis longe ciliatis pilis simplicibus, ad superficiem utrinque glabra, plus minusve purpurea, praecipue versus basem et secus costam; nervis, costa conspicua excepta, invisibilibus; caules 1, 2 vel 3, sine foliis supra partem infimam, erecta ca. 10 cm. alti, graciles, ca. 0.5-0.75 mm. crassi, sparse puberuli, pilis subappressis, inaequaliter bifurcatis, plus minusve (praecipue deorsum) purpureitinctus; inflorescentia vel simplex, racemosa, vel saepe ramo uno unifloro unibracteato distanter infra floram infimam praedita (ramo 3-25 mm. longo, flore graciliter pedicellato; bractea ca. 7 mm. longa vel minus, textura foliis simili); floribus superioribus aggregatis, ascendentibus in pedicellis brevibus minus quam 3 mm. longis, inferioribus gradatim distantioribus, infimis saepe in pedicellis 10 mm. longis gracillimis; flores 3-3.5 mm. longi; sepalis oblongis, subcanaliculatis, apice obtuse cucullatis, 1.5-2.5 mm. longis, 0.8-0.9 mm. latis, 3-nervis, anguste hyaline marginatis, valde purpureis, glabris; petalis parvis, 1.8-3.5 mm. longis, unguiculatis, unguis longitudine triplo brevior quam limbo, usque ad sesquialter longiore, ungui anguste ligulato, sine constrictione, sursum gradatim expanso, limbo abrupte expanso, late ovato, emarginato, glabro, pallidiuscule purpureo; stamina curvata, quam sepala paullo breviora vel paullulo longiora; filamentis anguste ligulatis; antheris basi cordatis, late ovatis, 0.4-0.5 mm. longis; siliqua quam 7 mm. brevior, stylo includente, ca. 1.4 mm. lata infra basem rotundatam vel cuneatam, sursum ad stylum attenuata; valvis obscure 1-

nerviis, pallide vel intense purpureis, glabris; septo hyalino, albo, enervio, persistenti, completo; semina bifariam ordinata in ambobus lateribus, ovulis 3–5 per singulam lineam; stylo demum ca. 1 mm. longo, ex medio constricto usque ad stigma gradatim incrassato; stigma capitato ca. 0.5 mm. lato, obscure bifido.

In “tundra” declivitatibus muscosis montium calcareorum, alt. 3500 ped., supra flumen “Bettles River” in montibus “Brooks Range,” Alaskanis, July 13, 1949, denominatum. Specimen typicum in Herbario, Univ. Michiganensis, *Jordal 2291*, conservatum.

I must agree with Mr. A. E. Porsild (in correspondence) that the species here proposed “comes dangerously close to *Braya americana* (Hook.) Fern.” It is, however, set apart from that species by the nerveless septum. This may be a minor feature but judging from the characters that have been previously used in separating species within the very critical genus *Braya* it is valid enough.

Recently E. C. Abbe in *RHODORA* 50: 1–15 (1948) has published on the members of this genus in boreal eastern America. He concludes that the specimens from Alberta and Newfoundland which Fernald in *RHODORA* 28: 203–204 (1926) referred to *B. americana* (Hook.) Fern. are distinct within their respective areas and that the Newfoundland material must be considered as belonging to a separate species which he establishes as *B. Fernaldii* Abbe. This species is characterized by having lance-subulate siliques, the seeds crowded into one row, valves hirtellous and petals uniformly lilac to pink, fading to white. It is clear from my description that in none of these features does it agree with my material.

The question now remains whether the proposed new species is identical with *B. alpina* Sternb. & Hoppe var. *americana* Hook., to which Fernald (op. cit.) gives specific status and which Hooker in *Flor. Bor. Am.* I, p. 65 diagnoses as follows: “stylo longiusculo gracili,” adding further in his annotations (loc. cit.) that Drummond’s material from the Rocky Mountains between lat. 52–57 “differ in no respect from the European plant in my possession from the Carinthian Alps, except in the greater length of the style, which, indeed, is very striking.”

Drummond’s material had not been seen by Fernald when he gave the var. *americana* Hook. specific status. I have not seen it either, but my material differs from *B. americana* according to Fernald’s expanded diagnosis in having completely glabrous

valves and in the fact that the septum only has the faintest trace of a nerve toward the very base and is not "manifeste uninervo," in agreement with the expression which applies to the latter species.

*B. americana*, *B. Fernaldii*, *B. alpina*, *B. aenea*, *B. Henryae* and *B. Earlettiana* are all very closely related and considered together phytogeographically they form a logical Arctic-Montane group of vicarious entities in which the components may perhaps be only varietally related to *Braya alpina* Sternb. & Hoppe. *Braya Earlettiana*, which is named in honor of Professor H. H. Bartlett, Director of the Botanical Gardens at the Univ. of Michigan, seems to be the particular type which survived in the unglaciated mountain regions of northern Alaska.

**Empetrum nigrum** L., var. **hermaphroditum** (Lange) Soerensen, f. **ciliatum** f. nov. A forma typica foliis margine valde villosociliato differt. Specimen typicum in Herbario Inst. Smithson. "U. S. National Herbarium," Washington, D. C. conservatum, Jordal 3742 prope "Old John Lake" in montibus "Brooks Range," Alaskanis, denominatis.

This curious form with strongly villous-ciliate leaves was discovered at Old John Lake. It is undoubtedly only a sporadic occurrence but deserves formal recognition.

**Gentiana glauca** Pall., f. **chlorantha** f. nov. Corolla 15-18 mm. longa, omnino pallide flavescenti-viridis. Specimen typicum in Herbario, Univ. Michiganensis conservatum, Jordal no. 2415 prope "Wiseman" in montibus "Brooks Range," Alaskanis, denominatis.

This is a curious color form in which the corolla is greenish-yellow instead of greenish-blue. It occurs occasionally in the populations of the species within our area.

**Phlox alaskensis** sp. nov. Planta perennis, adpressa-caespitosa; folia anguste oblanceolata, vix plus quam 1 cm. longa et 2 mm. lata (mediana  $7 \times 1.5$  mm.), apice valde apiculata, 1-nervia, nervo sub apice evanescenti, glabrata vel untrinque parce glanduloso-pubescentia etiamque valde villosociliata, pilis aliis longis, albis, multiseptatis, aliis brevioribus glanduloso-capitatis; flores in apice ramulorum solitarii, sessiles vel breviter pedicellati, pedicellis valde pubescentibus pilis albis vel flavis, glanduloso-capitatis; calyx anguste conicus, tubo ca. 4 mm. longo, pubescenti pilis eis foliorum similibus, conspicue 5-nervato, lobis linearibus, usque ad 5 mm. longis, viridibus, similiter pubescentibus, adscendentibus, sinulis acutis; corolla pallida caerulea vel incarnato-caerulea, tubo ca. 10 mm. longo, glabro, limbo vix 2 cm. lato, lobis obovatis, usque ad 9 mm. longis et 6 mm. latis, apice rotundatis; stylus ca. 5 mm. longus; antherae flavae, ovaes ca. 1 mm. longae; capsulae ca. 4 mm. longae, 3 mm. latae, valvulis venulo mediano praeditis, stramineis, coriaceis,

minute reticulato-foveolatis; semina in loculo singulo, ca. 1 mm. longa, testa atrobrunnea.

Specimen typicum in Herbario, Univ. Michiganensis conservatum, Jordal no. 2198 prope "Wiseman" in montibus "Brooks Range," Alaskanis, denominatis.

This species is closely related to *P. variabilis* Brand from which it differs, *inter alia*, in its strongly glandular foliage, stems and calyces. From *P. caespitosa* Nutt. it differs chiefly in its shorter, shortly exerted or included corolla tubes. From *P. Richardsonii* Hook. it differs mainly in its broader leaves and shorter corolla tubes and from *P. sibirica* L. conspicuously in its smaller size, much more prostrate habit and one-seeded locules.

The caespitose Phloxes in Alaska form a very complicated group of closely related plants. The plants here described as a new species, *P. alaskensis*, appear to have been referred to *P. sibirica* by most workers. Hultén recognizes only two species of *Phlox* in his Flora of Alaska and Yukon and according to his treatment my material would be referred to *P. sibirica*. His treatment is extremely conservative, however, and his concept of *P. sibirica* unduly broad. If Brand's treatment of the genus *Phlox* in Das Pflanzenreich has any authority then it is obvious that the plants we are here discussing cannot even be assigned to the subgenus *Macrophlox* where *P. sibirica* L. belongs. The relatively small size of the seeds of my material and the constantly one-ovuled locules would necessitate placing it in the subgenus *Microphlox* sect. *Chortobolon*.

**Erigeron alaskanus** Cronq., f. **albiflorus** f. nov. A forma typica differt ligulis albis.

Albino forms, differing only in having white rather than blue ligules, occur sporadically within the populations of this endemic species. They are sufficiently conspicuous to deserve some formal recognition.—BOTANICAL GARDENS, UNIVERSITY OF MICHIGAN.